



National Agromet Advisory Service Bulletin
based on
Extended Range Weather Forecast (ERFS)

Valid for 1st to 14th July, 2016

Date of Issue: 1st July, 2016

Issued by

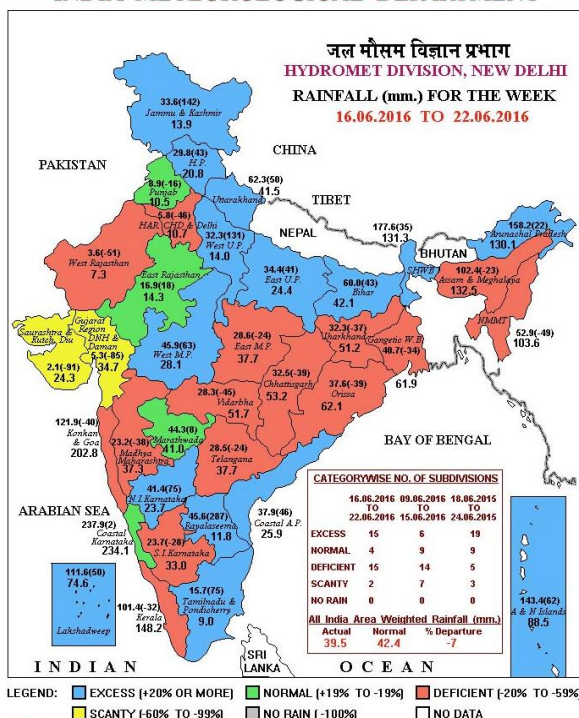
**Earth System Science Organisation
India Meteorological Department**

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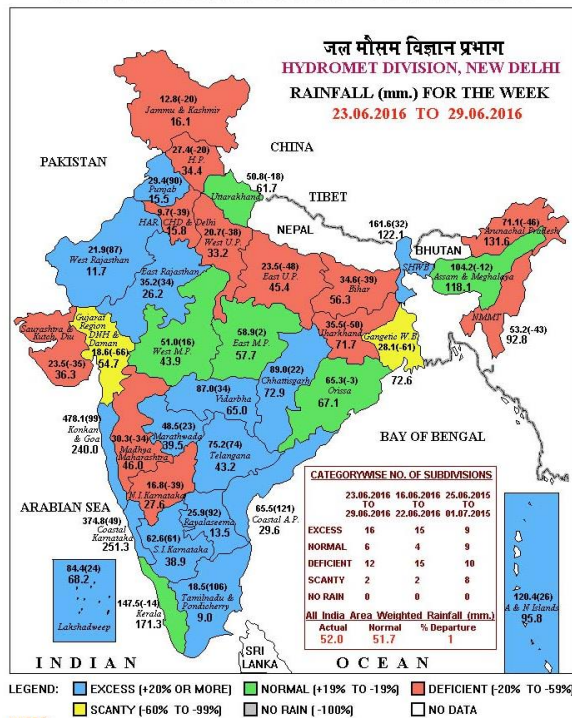
**Indian Council of Agricultural Research (ICAR)
All India Coordinated Research Project on Agricultural Meteorology (AICRPAM),
Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad**

Realized Rainfall (16th to 29th June 2016)

भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT



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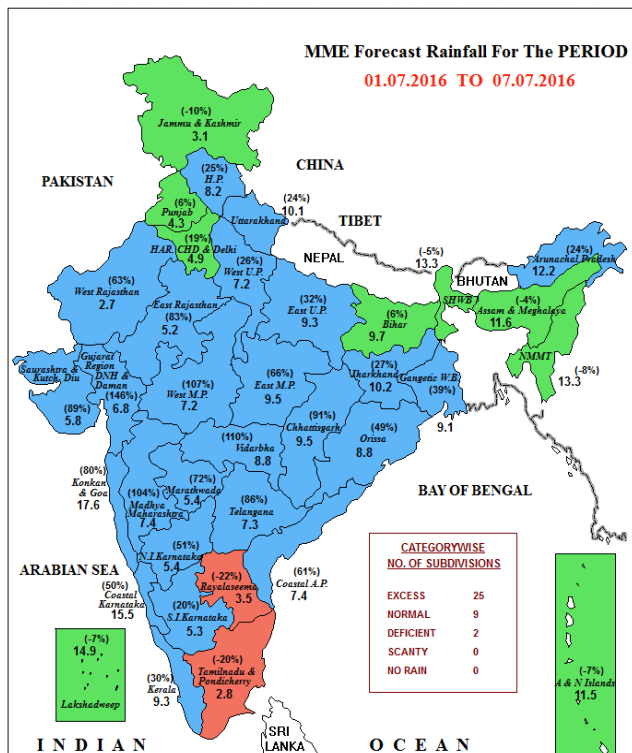
- Normal or above normal rainfall occurred during last two weeks in Uttarakhand, Punjab, East Rajasthan, West Madhya Pradesh, Marathwada, Sub-Himalayan West Bengal & Sikkim, Coastal Andhra Pradesh, Rayalaseema, Coastal Karnataka and Tamil Nadu.
- Normal or above normal rainfall occurred in either of the last two weeks in Jammu & Kashmir, Himachal Pradesh, West Rajasthan, East Uttar Pradesh, West Uttar Pradesh, East Madhya Pradesh, Chhattisgarh, Bihar, Odisha, Arunachal Pradesh, Assam & Meghalaya, Konkan & Goa, Vidarbha, Telangana, North Interior Karnataka, South Interior Karnataka, Kerala and
- Below normal rainfall occurred in the last two weeks over Haryana & Delhi, Jharkhand, Gangetic West Bengal, Nagaland, Manipur, Mizoram, Tripura, Madhya Maharashtra and Gujarat State.

Extended Range Forecast System

Subdivision wise rainfall forecast map for the next 2 weeks (IC = 29 June)

Rainfall forecast (mm/day) (01 July – 14 July, 2016)

**भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT**

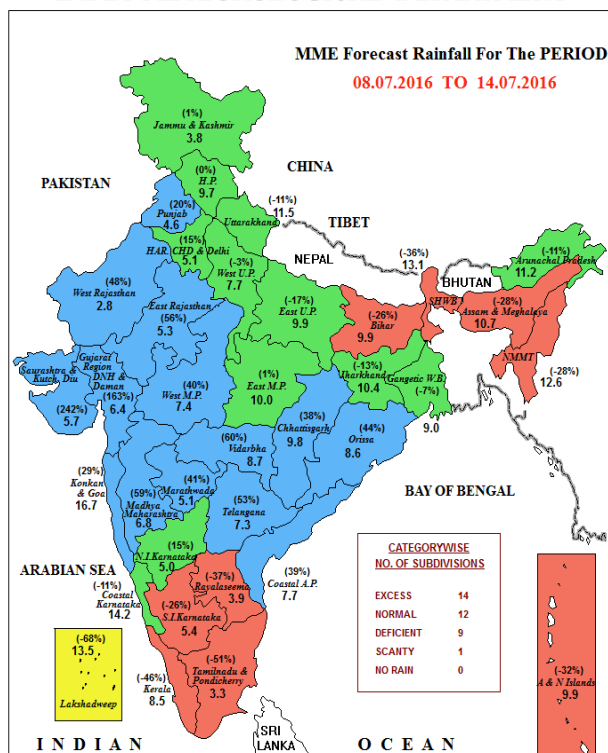


LEGEND: ■ EXCESS (+20% OR MORE) ■ NORMAL (+19% TO -19%) ■ DEFICIENT (-20% TO -59%)
■ SCANTY (-60% TO -99%) ■ NO RAIN (-100%) ■ NO DATA

Notes:

- (a) Rainfall figures are based on MME forecast
- (b) Bold figures indicate forecast Normal rainfall (mm/day)
- (c) Percentage Departures of Rainfall are shown in Brackets

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- (c) Percentage Departures of Rainfall are shown in Brackets

- Normal or above normal rainfall is likely to occur during next fortnight over Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana & Delhi, Uttar Pradesh, Rajasthan, Gujarat State, Madhya Pradesh, Chhattisgarh, Jharkhand, Odisha, Gangetic West Bengal, Arunachal Pradesh, Maharashtra & Goa, Telangana, Coastal Andhra Pradesh, North Interior Karnataka and Coastal Karnataka
- Normal or above normal rainfall is likely to occur in either of the next two weeks over Sub-Himalayan West Bengal & Sikkim, Bihar, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, South Interior Karnataka and Kerala.
- Below normal rainfall is likely to occur during the next two weeks over Rayalaseema and Tamil Nadu

Strategic Agricultural Planning based on rainfall during next two weeks till 14th July

- Strengthening of monsoon circulation and above normal rainfall over the country as a whole is expected during the period 1 to 14 July mostly over central and northwest India. It is also expected that 1st half of July will be good as indicated in weekly rainfall.
- Southwest monsoon covered Kerala, Tamil Nadu, North-eastern States, Karnataka, Andhra Pradesh, Maharashtra, Telangana, Chhattisgarh, East Madhya Pradesh, Odisha, West Bengal and Sikkim, Jharkhand, Bihar, East Uttar Pradesh, Jammu & Kashmir, most parts of Himachal Pradesh, Uttarakhand, West Madhya Pradesh, East Rajasthan and West Uttar Pradesh, many parts of Gujarat State.
- Conditions are becoming favourable for further advance of southwest monsoon in some more parts of East Rajasthan, remaining parts of Himachal Pradesh, Uttarakhand, West Madhya Pradesh, Uttar Pradesh and most parts of Punjab & Haryana, entire Chandigarh & Delhi and some parts of West Rajasthan during next 2-3 days.

In view of the above, following advisories are issued. Statewise crop varieties are given in Annexure I.

Major advisories for *kharif* crops

Kerala

Kerala State received deficient rainfall during 16-22 June and normal rainfall during 23-29 June whereas normal or above normal rainfall activity is likely during the next two weeks.

- Completion of transplanting of *Virippu* rice in Thiruvananthapuram, Kasargod, Kollam, Kannur, Kozhikode, Malappuram, Palakkad, Thrissur and Ernakulam districts of Southern and Northern Zone.
- Continuation of direct sowing of rice in Alappuzha and Kottayam districts.
- Provide adequate drainage in rice nurseries.
- Maintenance of proper water level in rice field.

Karnataka

South Interior Karnataka received deficient rainfall during 16-22 June and excess during 23-29 June, North Interior Karnataka received excess rainfall during 16-22 June and deficient rainfall during 23-29 June and Coastal Karnataka received normal/excess rainfall during 16-29 June, whereas normal/excess rainfall is likely to occur over Coastal Karnataka and North Interior Karnataka, excess rainfall is likely over South Interior Karnataka during 16-22 June and deficient rainfall during 23-29 June.

Coastal Karnataka

- Continuation of transplanting of rice in Dakshina Kannada and Udupi district of Coastal Zone of Karnataka utilising realised rainfall.
- Continuation of nursery sowing and transplanting in Uttar Kannada district of Hill Zone.
- Maintenance of proper water level in rice fields.
- Rainwater harvesting for further use.

South Interior Karnataka

- Continuation of nursery sowing of rice and sowing of red gram in Chickamagaluru, Hassan and Shivamogga districts of Southern Transition Zone utilizing realised and expected rainfall.
- Continuation of nursery sowing of rice and ragi, continue sowing of cowpea, green gram, black gram, sesame, hybrid jowar and vegetable crops (chilli, brinjal, radish, ladies finger, beans, carrot, onion etc.) in Kodagu, Mandya, Mysuru and Chamrajnagar districts of Southern Dry Zone utilizing realised and expected rainfall.
- Continuation of sowing of red gram, maize, groundnut, ragi, cowpea and castor in Bengaluru Rural, Bengaluru Urban, Ramnagara, Chickaballapura and Kolar districts of Eastern Dry Zone with sufficient realised rainfall and expected rainfall.
- Continuation of nursery sowing of rice in Davengere district, sowing of cotton in Chitradurga and Tumakuru districts, minor millet in Chitradurga district, jowar, red gram, sunflower, groundnut, ragi in Chitradurga, Davengere and Tumakuru districts of Central Dry Zone with realised rainfall.
- Pigeon pea with suitable varieties of TTB-7, BRG-1 and Hyd-3c @ 15kg/ha and treat the seeds with *rhizobium* culture @ 500gm/ha before sowing. Sow the seeds with spacing of 60 cm x 23 cm.
- Groundnut: Bunch type of varieties, JL-24 and TMV-2 (Use 125 kg seeds/ha (i.e 50 kg seeds per acre)
- Intercultural operations and mulching in already sown crops to conserve soil moisture.
- Rainwater harvesting for further use.

North Interior Karnataka

- Continuation of sowing of green gram, black gram, soybean, maize and cotton wherever the soil moisture condition is favorable for sowing in Dharwad, Belagavi and Haveri districts, sowing of sorghum in Dharwad and Haveri districts, sowing of groundnut in Dharwad and Belagavi districts and planting of sugarcane in Belagavi district of North Transition Zone utilising realised rainfall and expected rainfall.
- Continuation of nursery sowing of rice and sowing of soybean, green gram, black gram, sorghum, pigeon pea after seed treatment in Bidar district of North East Transition Zone with realised and expected rainfall.
- Continuation of sowing of red gram, black gram, green gram, cotton and maize in Ballari, Kalaburgi, Koppal, Raichur and Yadgir districts of North East Dry Zone with realised and expected rainfall.
- Continuation of sowing of green gram, sunflower, maize, Bt. cotton, red gram, bajra, sorghum, groundnut, sesame in Vijayapura, Bagalkote and Gadag districts of North Dry Zone with realised and expected rainfall; use medium duration varieties of red gram for sowing; use wilt resistant variety TS-3R, wherever the region is susceptible for wilt disease.
- Intercropping of bajra + groundnut (bunch) in 2:4 row proportion; bajra + red gram in 2:1 row proportion; groundnut (bunch) + red gram in 3:1 or 4:2 row row proportion, red gram + sesamum in 1:2 or 2:4 row proportion in light and medium black soils is suggested in North Dry Zone to make efficient use of available soil and water resources and to get

higher returns.

Andhra Pradesh

Andhra Pradesh received excess rainfall during 16-29 June which is likely to continue over Coastal Andhra Pradesh, whereas Rayalaseema is likely to receive deficient rainfall during 1-14 July.

Coastal Andhra Pradesh

- Nursery sowing of rice, sowing of maize, millets, red gram, black gram, green gram and cotton in Krishna, Prakasam, Guntur and West Godavari districts of Krishna Godavari Zone.
- Continuation of nursery sowing of rice and ragi, sowing of groundnut, medium duration varieties of maize in East Godavari district of High Altitude Tribal Zone with realized and expected rainfall.
- Continuation of sowing of Sesame in Srikakulam, Vizianagaram, Vishakhapatnam, Krishna and West Godavari districts.
- Continuation sowing of bajra, red gram, green gram, black gram, groundnut and ragi, in Srikakulam, Vizianagaram and Vishakhapatnam districts of North Coastal Zone.
- Sowing of groundnut in Nellore district.
- Drain out the excess water from the sugarcane, mesta and sesame fields in north coastal AP.

Rayalaseema

- Continuation of sowing of rainfed groundnut in July in Anantpur and Kurnool districts of Scarce Rainfall Zone with realized rainfall.
- Continuation of transplanting of rice, sowing of *kharif* groundnut, red gram, maize, jowar, bajra in Chittoor and Cuddepah districts of Southern Zone with realised rainfall.
- Continuation of sowing of *kharif* crops like red gram, bajra, korra and castor in Anantpur and Kurnool districts of Scarce Rainfall Zone with realised rainfall. Sowing of sunflower in Kurnool district.
- Nursery sowing of rice in black soils in Kurnool district.
- Maintenance of 2-3 cm water level in rice field.
- Thinning in June first week sown red gram crop.
- Rainwater harvesting and storing it in reservoirs for future use.
- Spraying of pre-emergence herbicide Pednimethalin 30% EC @ 1.3-1.6 litre/acre or Butachlor @ 1.25-1.5 litre/acre within the 48 hours after sowing for effective weed control and in turn for soil moisture conservation.
- As there is a forecast of deficit rainfall/less than normal rainfall during the next week, provide protective irrigation to early sown groundnut, crop which is at flowering to peg initiation stage in Chittoor, Kadapa, Nellore districts and maize, cotton crops with the harvested rain water in farm ponds. Wherever irrigation facilities are not available, provide mulch to reduce the moisture loss.
- Groundnut crop is at emergence to vegetative stage in parts of Ananthapuram district. As Groundnut crop can withstand dry spell at vegetative stage and it is beneficial for uniform

flowering, farmers can wait for protective irrigation. Instead, they can go for intercultural operations for weed control and conserving soil moisture.

- If continuous dry spell conditions prevail, farmers should watch for sucking pest incidence like leaf miner in groundnut, thrips in Greengram, Blackgram, sucking pests in cotton. For control of thrips spray Acephate @ 1.5g/l, Fipronil @2ml/l, for control of leaf miner spray Chlorpyrifos @2.5ml/l + Dichlorvos @1ml/l and for control of sucking pests in cotton take up stem application of Imidacloprid and water in 1:20 ratio at 20 DAS or spray Imidacloprid @0.4ml/l or Acetamiprid 0.2g/l or Acephate 1.5g/l.

Telangana

Telangana received deficient rainfall during 16-22 June and excess during 23-29 June which is likely to continue during 1-14 July.

- Continuation of nursery sowing of rice (medium and short duration varieties) in Nizamabad, Karimnagar and Khammam districts of North Telangana Zone and in Mahbubnagar, Nalgonda, Medak, Rangareddy and Warangal districts of Southern Telangana Zone with realised and expected rainfall. Sowing of rice nurseries using variety Telangana Sona (RNR 15048) in July.
- Continuation of sowing of jowar, maize, green gram, black gram, red gram (as inter crop or main crop), cotton and soybean in Adilabad, Nizamabad, Karimnagar and Khammam districts of Northern Telangana Zone with realised and expected rainfall. Sowing of cotton in red and black soils.
- Continuation of sowing of rainfed crops like soybean, jowar, maize, red gram, green gram and Bt. cotton in Mahbubnagar, Nalgonda, Khammam, Rangareddy districts of Southern Telangana Zone with realised and expected rainfall.

Tamil Nadu

Tamil Nadu received excess rainfall during 16-29 June, whereas deficient rainfall is expected during 1-14 July.

- Continuation of nursery sowing of *kuruvai* rice after seed treatment and SRI cultivation in Thanjavur, Nagapattinam, Karur, Thiruvavur, Perambur, Trichy districts of Cauvery Delta Zone with realised rainfall. Start land preparation and transplanting of rice seedlings from second week of July.
- Continuation of nursery sowing of rice in Coimbatore, Thiruppur and Erode districts of Western Zone; provide drainage in *kar* rice nursery to prevent damage to seedlings.
- Continuation of sowing of small millets in the foothills of western ghat areas in Coimbatore, Thiruppur and Erode districts of Western Zone.
- Continuation of cultivation of groundnut and black gram in Salem, Namakkal, Dharmapuri and Krishnagiri districts.
- Maintain 2-3 cm water level in rice field.
- Intercultural operation and mulching in already sown crops for conservation of soil moisture.

Maharashtra

Konkan & Goa, Madhya Maharashtra and Vidarbha received deficient rainfall and Vidarbha received normal rainfall during 16-22 June; Konkan & Goa, Marathwada and Vidarbha received excess and Madhya Maharashtra received deficient rain during 23-29 June, whereas, excess

rainfall is likely over Maharashtra & Goa during 1-14 July.

Konkan

- Continuation of transplanting of 22-25 days old rice seedlings in Raigad, Ratnagiri, Thane and Sindhudurg districts.
- Completion of sowing of *kharif* groundnut.

Madhya Maharashtra

- Completion of nursery sowing of *kharif* rice on raised bed in Sangli, Satara and Kolhapur districts and transplanting of 21-25 days old rice seedlings.
- Continuation of sowing of soybean, red gram, green gram, groundnut in Kolhapur, Sangli, Satara, Solapur districts with realised rainfall.
- Completion of preparatory tillage and sowing of soybean, cotton, red gram, green gram in Nasik, Jalgaon, Dhule and Nandurbar districts of North Madhya Maharashtra after receipt of sufficient rainfall.
- Continue nursery sowing of rice and sowing of maize, groundnut and soybean in Ahmednagar and Pune districts.
- Sunflower + pigeon pea (2:1) is recommended. Pigeon pea: BSMR- 736, 853, BDN- 708, Phulerajeshwari, Vipula; Sunflower-Modern, Phuleraviraj, Bhanu.

Marathwada

- Continuation of sowing of jowar, soybean, cotton, red gram, green gram, black gram, sunflower in Nanded, Aurangabad, Latur, Osmanabad, Parbhani, Beed, Hingoli districts.
- Intercropping of cotton + pigeon pea (6:1 or 8:2), cotton + soybean (1:1), cotton + green gram (1:2), cotton + black gram (1:1) serve as an insurance against crop failures and as a preventive against soil erosion.

Vidarbha

- Continuation of nursery sowing of *kharif* rice in Gondia, Bhandara, Chandrapur, Nagpur and Gadchiroli districts of Eastern Vidarbha Zone utilising realised monsoon rainfall.
- Sowing of red gram in Nagpur, Gondia, Gadchiroli, Chandrapur districts.
- Sowing of soybean, cotton, red gram and green gram using optimum soil moisture condition in Akola, Washim, Amravati, Yavatmal, Buldhana, Bhandara and Wardha districts of Central Vidarbha Zone with realised rainfall.
- For cotton in areas with delayed sowing condition (at the most up to 10 July), prefer early varieties of American (AKH-8828, PKV Rajat, AKH-081) and Desi (AKA-5, AKA-7, AKA-8) cotton, use 20 % more seed rate than recommended and reduce intra-row spacing.
- Intercropping of cotton + green gram/black gram (1:1), pigeon pea + green gram / black gram/soybean (1:2 / 2:4), sorghum + green gram/pigeon pea (3:3) and Soybean + sorghum + pigeon pea (6:2:1). Also in soybean after every 6 or 9 rows one row of pigeon pea may be sown in Central Vidarbha Zone.

Gujarat

Rainfall over Gujarat State was scanty/deficient during 16-29 June, whereas, excess rainfall is expected during 1-14 July.

Gujarat Region

- Continuation of nursery sowing of *kharif* rice and ragi with realised and expected rainfall in Navasari, Valsad and Dangs districts of South Gujarat Heavy Rainfall Zone.
- Continuation of direct sowing of rice, ragi and red gram (on bunds) in Navasari, Valsad and Dangs districts of South Gujarat Heavy Rainfall Zone utilising realised and expected rainfall.
- Sowing of cotton, pigeon pea, sorghum etc. in Bharuch, Surat district with realised rainfall and in Narmada and Tapi districts of South Gujarat Zone with receipt of expected sufficient rainfall.
- Nursery sowing of rice; sowing of pearl millet, ground nut, cotton, green gram, black gram, cowpea and pigeon pea with receipt of expected sufficient rainfall in Anand, Dahod, Kheda, Panchmahals and Vadodara districts of Middle Gujarat Zone.
- Sowing of cotton, groundnut, pearl millet, sesame, green gram, black gram, red gram and maize with receipt of expected sufficient rainfall in Banaskantha, Sabarkantha, Mehsana, Patan and Gandhinagar districts of North Gujarat Zone. Intercropping of green gram, pigeon pea, guar in pearl millet for getting more income.
- Recommended cultivars are :

For South and Middle Gujarat region:

- Paddy: GR-8,9 and Gurjari can be taken.
- Fodder sorghum: S-1049, C-10-2
- Sunflower: Modern, EC 68414
- Cotton: Guj. Hy. Cotton-6, 8, 10, 12 and Desi cotton
- Early maturing Bt. Hybrid cotton and Intercropping: pearl millet + pigeon pea (2:1) are advised.

For North Gujarat region:

- Sunflower: Modern, EC 68414
- Black gram: T-9, Guj. Udid-1
- Green gram: GM-4, K-851, Meha

Saurashtra & Kutch

- Continuation of sowing of cotton, groundnut, sesame, pigeon pea, soybean and castor in Junagadh and Porbandar districts of South Saurashtra Zone with realised rainfall.
- Continuation of nursery preparation for rice; sowing of cotton, pearl millet, groundnut and green gram with receipt of expected rainfall in Ahmedabad and Bhavnagar districts of Bhal and Coastal Zone.
- Sowing of cotton, groundnut, pearl millet, sesame green gram, black gram, cow pea and pigeon pea with receipt of expected rainfall in Amreli, Jamnagar, Surendranagar and Rajkot districts of North Saurashtra Zone.
- Sowing of cotton, groundnut, pearl millet, sesame, green gram, black gram, red gram and maize after receipt of sufficient rainfall in Kachchh district of North West Zone of Gujarat. Intercropping of green gram, pigeon pea, guar in pearl millet is advised for getting more income.

Arunachal Pradesh

Excess to deficient rainfall activity observed during last fortnight and excess rainfall is likely to occur during first half and normal in later part of next fortnight.

- Continue sowing of groundnut and soybean.
- Undertake manual weeding in green gram / black gram.

Assam

Deficient to normal rainfall activity observed during last fortnight in Assam & Meghalaya. Normal rainfall is likely to occur during first half and subdued in later part of next fortnight.

- In Karbi Anglong, Baksa, Barpeta, and Kamrup districts of Assam, start preparing the main field for transplanting of *sali* rice.
- Heavy weed growth is seen in summer black gram and green gram crops due to rainfall during last couple of weeks in Darrang, Dhemaji and Sonitpur districts of Assam. Undertake weeding 20-25 days after sowing on a bright sunny days.
- In Nagaon and Marigaon districts of Central Brahmaputra Valley Zone of Assam, continue sowing of *baou* rice.

Meghalaya

- Nursery raising and main field preparation of *sali* rice in all the districts of Meghalaya.
- Sowing of groundnut in all the districts of Meghalaya.
- Sowing of soybean in all the districts of Meghalaya.

Deficient rainfall occurred in last fortnight over Nagaland, Manipur, Mizoram and Tripura. Normal rainfall is likely to occur during first half and subdued in later part of next fortnight.

Manipur

- Nursery sowing and main field preparation for transplanting of *kharif* rice in all the districts of Manipur.
- Sowing of black gram and soybean in all the districts of Manipur.

Mizoram

- Transplanting of *kharif* rice, two to three seedlings per hill.
- Sowing of *kharif* green gram, black gram and rajma.

Tripura

- Complete nursery sowing of *aman* rice in all the districts of Tripura.
- Maintain optimum water level in *jhum* rice in late tillering stage.
- Complete sowing of maize in all the districts of Tripura.

Nagaland

- Continuation of nursery sowing of rice in low land.

West Bengal

Excess rainfall occurred in Sub Himalayan West Bengal and scanty in Gangetic West Bengal in later part of last fortnight. Normal rainfall is likely to occur in first half and subdued in later part of next fortnight.

- In South 24 Parganas and East Midnapore districts in Coastal Saline Zone, undertake sowing of wet seeded long and medium duration *aman* rice.
- Undertake nursery rice sowing in Kalimpong district.
- Transplanting of *aman* rice in Dakshin Dinajpur and Malda districts.

Odisha

Deficient to normal rainfall occurred during last fortnight. Excess rainfall is likely to occur during next fortnight.

- In Naupara and Kalahandi districts, continue nursery sowing of medium duration rice varieties in medium land and medium late duration varieties in low land. Undertake sowing of cotton, maize and arhar utilizing the realized and expected rainfall.
- Complete direct sowing of rice in up, medium, low and deep low land in Gajapati, Kandhamal and Rayagada districts.
- In Balasore, Bhadrak and Jajpur districts, complete sowing of direct seeded rice in low lands.
- In Malkangiri district, continue sowing of maize.
- The weather is suitable for nursery sowing of rice, mainly the dry bed nursery for early transplanting of rice. **Dry bed nursery:** Plough and pulverize the land thoroughly. Layout 6 inches raised beds of 3 ft wide with convenient length. Keep 1 ft wide channel between 2 beds for irrigation and drainage. Apply 40 baskets of FYM, 12 kg Super phosphates and 2 kg MOP to the beds. Use 25 kg of seeds/acre. Treat the seeds with 3 g Thiram or Topsin-M/kg of seeds before sowing.

Bihar

Excess rainfall occurred in first half and deficient in second half of last fortnight. Normal rainfall is likely to occur in first half and subdued in later part of next fortnight.

- In Bhagalpur, Banka, Lakhisarai, Patna, Nalanda, Gaya and Bhojpur districts of South Bihar Alluvial Zone, complete nursery sowing of medium and long duration rice.
- In Saharsa, Purnia, Supaul and Araria districts in North East Alluvial Zone, continue nursery raising for upland rice varieties up to 10th July and main land preparation for transplanting of low land rice and also continue sowing of kharif maize.
- In Begusarai, Darbhanga, East Champaran, Gopalganj, Samastipur, West Champaran of North West Alluvial Plain Zone, continue nursery sowing of kharif rice.

Jharkhand

Deficient rainfall occurred during last fortnight. Excess rainfall is likely to occur in first half and normal in later part of next fortnight.

- In Deogarh, Dhanabad and Dumka districts, continue sowing of upland rice, groundnut, arhar and maize.
- In Saraikela, East & West Singhbhum districts in South Eastern Plateau, continue timely sowing of direct seeded upland rice, maize and pigeon pea. Complete transplanting of finger millet. As sufficient moisture is available in the field, continue sowing of groundnut.
- In Bokaro, Khunti, Ramgarh and Ranchi districts continue nursery sowing of rice in raised beds. Also continue sowing of groundnut, arhar, black gram, maize.

Madhya Pradesh

East Madhya Pradesh

Normal rainfall occurred in second week of last fortnight and excess/ normal rainfall is likely to continue in next fortnight.

- Continue nursery sowing of rice in East Madhya Pradesh. Undertake sowing of soybean and red gram utilising the realised and expected rainfall.
- Continuation of sowing of maize, soybean, red gram and cotton in Chhindwara district, with expected rainfall.
- Continuation of nursery sowing of rice and undertake sowing of *kharif* crops like, red gram, maize, soybean, sesame, groundnut in Narsingpur district, utilising the realised and expected rainfall.
- Undertake sowing of soybean, til, maize, moon, urd, sesame, and groundnut in Chhatarpur and Tikamgarh districts utilising the realised and expected rainfall.
- Continue nursery sowing of rice and undertake sowing of red gram and soybean in Sagar and Damoh districts, utilising the realised and expected rainfall.
- Continuation of nursery sowing of rice in Rewa, Satna, Panna, Jabalpur, Seoni, Siddhi, Katni, Shahdol, Umaria, Mandla, Dindori, Balaghat, Anuppur, Singrauli district of Kymore Plateau Zone. Prepare nursery for sowing of arhar through transplanting method and continue direct sowing of arhar. Undertake sowing of soybean with receipt of sufficient rainfall.

West Madhya Pradesh

Excess/normal rainfall occurred in previous fortnight and excess rainfall is likely to occur in next fortnight.

- Continue sowing of soybean and maize in Mandsaur, Ratlam, Ujjain, Dewas, Indore, Shajapur, Rajgarh, Neemuch districts utilising the realised and expected rainfall.
- Continue land preparation and sowing of maize, soybean, red gram and cotton in Betul district with expected rainfall.
- Continue nursery sowing of rice in Gwalior, Bhind, Morena, Shivpuri, Guna, Ashoknagar and Sheopur districts. Undertake sowing of soybean, arhar, pearl millet, red gram, green gram and black gram utilising the realised and expected rainfall.
- Continue sowing of soybean in Khargwan, Khandwa and Barwani districts utilising the realised and expected rainfall. Undertake sowing of maize.
- Continue preparation of rice nursery in Hoshangabad district utilising the realised and expected rainfall.
- Continue nursery sowing of rice. Undertake sowing of red gram and soybean in Bhopal, Vidisha, Raisen, and Sehore, districts utilising the realised and expected rainfall.
- Continue nursery sowing of rice in Jhabua, Alirajpur and Dhar districts. Undertake sowing of soybean, black gram and maize utilising the realised and expected rainfall.

Chhattisgarh:

Excess rainfall occurred in second week of last fortnight and likely to continue in next fortnight.

- In North Chhattisgarh, continue line sowing of rice and nursery sowing of rice.
- In Central Chhattisgarh, continue line sowing of rice and nursery sowing of rice. Continue sowing of red gram, soybean and maize.
- In South Chhattisgarh, continue nursery sowing of rice, line sowing of rice and sowing of

tuber crops. Continue land preparation for *kharif* crops like soybean, groundnut and til and undertake sowing after receipt of sufficient rainfall.

Jammu & Kashmir

Excess rainfall occurred in first week and deficient in second week of last fortnight. Normal rainfall is likely to occur in next fortnight.

- Undertake transplanting of early sown rice seedlings in Jammu, Kathua and Reasi districts of Sub Tropical Zone in Sub Tropical Zone. Continue sowing of maize.
- Undertake transplanting of rice seedlings in Rajouri, Ramban Poonch and Udhampur districts of Intermediate Zone. Plant 2-3 seedlings per hill at 3 to 5 cm deep in the soil. Continue sowing of maize.
- Continue transplanting of rice seedlings, transplant 2-3 plants/hill after proper puddling in Srinagar, Badgam, Kupwara and Baramulla districts of Valley Temperate Zone.

Uttarakhand

Excess / Normal rainfall occurred in last fortnight and is likely to continue in next fortnight.

- Continue transplanting of rice and sowing of black gram and green gram in Nainital district of Bhabar and Tarai Zone,.
- Undertake transplanting of rice in Udham Singh Nagar district of Bhabar and Tarai Zone. Continue sowing of groundnut.
- In Dehradun, Pauri and Haridwar districts of Sub Humid Sub Tropic Zone, continue transplanting of long duration varieties of rice.
- In Tehri Garhwal district of Hill Zone, undertake transplanting of rice at 4-5 leaf stage.

Himachal Pradesh

Excess rainfall occurred in first week of last fortnight and excess/normal rainfall is likely to occur in next fortnight.

- In Una, Hamirpur, Kangra and Chamba districts of Sub-Montane and Low Hills Sub-Tropical Zone, continue nursery sowing and land preparation of main field for transplanting of rice and continue sowing of maize.
- In Bilaspur, Simla, Sirmaur and Solan districts of Mid Hills Sub Humid Zone, continue nursery sowing of rice and land preparation of main field for transplanting of rice and sowing of maize.

Haryana & Delhi

Deficient rainfall occurred in last fortnight and normal rainfall is likely to occur in first part of next fortnight.

Haryana

- Continue transplanting of rice seedlings in Western and Eastern Zone. Prepare field for sowing of guar and bajra in Western Zone.

Delhi

- Undertake transplanting of 20-25 days old paddy seedling in prepared fields in Western Semi Arid Zone.
- Undertake sowing of maize and soybean.
- Continue sowing of pigeon pea.

Punjab

Excess/normal rainfall occurred in last fortnight and likely to continue in next fortnight.

- Continue direct sowing of basmati variety Pusa Basmati 1121 in Amritsar, Kapurthala, Jalandhar, Ludhiana, Fatehgarh Sahib, Taran Taran and Patiala districts of Central Plain Zone. Undertake transplanting of rice seedlings. Continue sowing of maize.
- Undertake transplanting of rice in Moga, Bhatinda, Mansa, Muktsar, Sangrur and Barnala districts of Western Zone.
- Continue transplanting of rice seedlings in Ferozepur, Faridkot, Fazilika districts of Western Plain Zone.

Uttar Pradesh

East Uttar Pradesh

Excess rainfall occurred in first week of last fortnight and normal/excess rainfall is likely to occur in next fortnight.

- Continuation of nursery sowing of rice and sowing of maize in Allahabad, Fatepur, Chitrakut districts of Central Plain Zone. Continuation of sowing of arhar.
- Continuation of nursery sowing of rice and sowing of arhar in Faizabad, Gorakhpur, Sultanpur districts of Eastern Plain Zone. Continue sowing of black gram and green gram. Undertake sowing of jowar and bajra.
- Continuation of nursery sowing of rice and sowing of early maturing variety of maize in Kanpur, Sitapur, Unnao, Lucknow districts of Central Plain Zone.
- Continuation of nursery sowing of rice in Varanasi, Azamgarh, Mirzapur, Mau districts of Central Plain Zone. Undertake sowing of arhar.

West Uttar Pradesh

Excess rainfall occurred in first week of last fortnight and normal/excess rainfall is likely to occur in next fortnight.

- Complete nursery sowing of rice in Jhansi, Jalaun, Lalitpur, Mahoba and Hamirpur district of Bundelkhand Zone. Undertake sowing of groundnut, soybean, jowar, maize, black gram and green gram.
- Undertake transplanting of rice after receipt of sufficient rain in Meerut, Saharanpur, Gazipur, Muzaffarnagar, Aligarh districts of Western Plain Zone of Uttar Pradesh. Undertake sowing of maize.

Rajasthan

East Rajasthan

Excess rainfall occurred in last fortnight and likely to continue in next fortnight.

- Continue sowing of cotton in Dungarpur and Banswara districts of Southern Humid Plain Zone.
- Continuation of sowing of pearl millet in Bharatpur, Alwar, Karauli districts of Flood Prone Eastern Plain Zone. Continuation of sowing sorghum.
- Continuation of sowing of groundnut and maize in Bilwara, Chittorgarh, Udaipur districts of Sub Humid Southern Plain and Aravali Hill Zone as the rainfall is expected in next fortnight.

West Rajasthan

Excess rainfall occurred in last fortnight and likely to continue in next fortnight.

- Continuation of land preparation and sowing of groundnut, bajra, cluster bean and moth

bean in Bikaner, Jaisalmer districts of Arid Western Plain Zone as rainfall is expected in next fortnight.

- Continue sowing of cluster bean in Sriganaganagar and Hanumangarh districts of Irrigated North Western Plain Zone as rainfall is expected in next fortnight.
- Sowing of bajra and green gram in Churu, Barmer, Jalore, Jodhpur and Pali districts of Arid Western Plain Zone as rainfall is expected in next fortnight

Advisories for other crops

Kerala

- Planting of banana, weeding and earthing up in bhindi and application of irrigation at 2-3 days intervals in bhindi Alapuzza district; planting of coconut, completion of transplanting of vegetable crops like bhindi, brinjal and chilli in Kottayam district of Problem Area Zone.
- Provide adequate drainage facility for coconut, nutmeg, pepper, banana, vegetables and orchards to avoid water stagnation.
- Earthing up in vegetable crops in Pathanamthitta District Southern Zone.
- Continuation of planting of coconut, arecanut, pepper and cardamom in Wayanad and Idukki districts of High Altitude Zone.
- Continuation of tapping of rubber and completion of new planting of rubber seedlings in Thiruvananthapuram district.
- Due to high relative humidity, there is a chance of sheath blight, sheath rot, leaf spot diseases in rice in Thrissur, Palakkad and Ernakulam districts of Central Zone; to control, dip the roots of seedling in pseudomonas solution by mixing 20 g pseudomonas culture in one litre of water for 30 minutes while transplanting.
- Keep vigilance on appearance and spread of Mahali disease in arecanut. Apply Bordeaux mixture (1%) to the inflorescences in Kasargod district.

Karnataka

South Interior Karnataka

- Completion of planting of ginger and turmeric.
- Preparation of the soil conservation structures like bunds to drain out the excess water and to avoid soil erosion incorporate the farm yard manure in soil.

North Interior Karnataka

- Repairing of bunds and check dam so as to reduce the runoff and to check the soil erosion in Bidar district.
- Continue fresh plantation of fruit trees, teak, neem, tamarind, acacia or other trees on the bunds, uncultivated and marginal land in North East Transition Zone and North East Dry Zone.
- Sowing of crops in rows across the slope to facilitate better conservation of moisture in the soil.

Andhra Pradesh

- Continuation of planting of rainfed sugarcane in Srikakulam, Vizianagaram and Vishakapatnam districts. Removal of excess water from sesamum and mesta crop fields immediately as the crops are sensitive to excess moisture.
- Undertake Earthing up in 120 days old sugarcane crop.
- Undertake sowing of green manure crops.
- Procurement of good quality seeds from reputed firms.

Royalaseema

- Spacing: red gram 90 x 20 cm for light red soils and 180 x 20 cm for black soils, bajra 45 x 12-15

cm, korra 22.5 X 7.5 cm.

Telangana

- Continuation of harvesting of matured vegetables in Northern Telangana Zone.

Tamil Nadu

- Gypsum application @ 160 kg/acre in 40 days old rain fed groundnut of Pollachi taluka, followed by earthing up in Coimbatore, Tiruppur, Erode districts.
- Planting of rubber and ginger in Kanyakumari district.
- Undertake pit preparation for fresh planting of orchard crops and picking up of fully opened cotton bolls in early morning hours in clear weather.
- In Salem, Namakkal, Dharmapuri and Krishnagiri districts, severe incidence of woolly aphid was found in sugarcane. To control, spray Acephate @ 2g/litre of water along with adjuvant on a non rainy day.
- Provide drainage facilities in the fields in Nilgiris district.
- Covering the root zone of horticulture crops with coir pith to conserve moisture in the North Eastern Zone.
- Hand weeding and hoeing may be done in irrigated 30 days old turmeric.

Maharashtra

Konkan

- Transplanting of chilli and brinjal.
- Maintenance of proper drainage in rice and vegetable crops (Bhindi and cluster bean).
- Continuation of new planting of mango, cashew, sapota.
- Providing mechanical support to newly planted grafts/plants.
- Continuation of sowing of biennial forage crops like Paragrass, Napier, Gajraj etc.
- Protect the animals and poultry birds during rains.

Madhya Maharashtra

- Completion of nursery sowing of kharif vegetable crops like tomato and chilli. Nursery sowing of *kharif* onion & tomato crops in Nashik district. Start sowing of Niger after sufficient moisture in soil.
- Plantation of saplings of forest species like Jamun, Suru, Acacia in Western Ghat Zone.
- Continuation of fresh planting of orchards mango, banana, papaya and pomegranate.
- Planting of ginger and turmeric.
- Cultivation of sorghum, bajra, maize, cowpea and hybrid napier as green fodder for livestock.

Marathwada

- Transplanting of vegetable crops like brinjal, chilli and tomato seed on raised bed.
- Rain water harvesting for future use.
- Pre-emergence application of weedicide like Pendimethalin/Atrazin to control weeds in pigeon pea, green gram, black gram, groundnut, maize etc.
- Continuation of sowing of fodder crops like African Tall, Ganga-5, Vijay and Manjari.

Vidarbha

- Completion of sowing of vegetables like bitter gourd, tinda, ridge gourd, smooth gourd, bottle gourd, cowpea, cluster bean, coriander etc. in Central Vidarbha Zone.

- Planting of turmeric in Eastern Vidarbha Zone.
- Rain water harvesting for future use.

Gujarat

Gujarat Region

- Continuation of nursery sowing of chilli and brinjal, earthing up in sugarcane, arrangement for rain water harvesting in Navasari, Valsad and Dangs districts of South Gujarat Heavy Rainfall Zone.
- To protect rice nursery from wilting, seed treatment with 6 g Streptocyclin +12 g Mercury solution in 24 litre of water to seeds required for one ha, intercultural operations, weeding and gap filling in earlier sown cotton crop to conserve moisture and to maintain plant population in Anand, Dahod, Kheda, Panchmahals and Vadodara districts of Middle Gujarat Zone.
- Continuation of gap filling in pre-sown groundnut and cotton; nursery sowing of fennel, intercropping of green gram, pigeon pea, guar in pearl millet for getting more income, harvesting of matured fruits of mango, jamun, lemon etc. and budding in aola and ber in Banaskantha, Sabarkantha, Mehsana, Patan and Gandhinagar districts of North Gujarat Zone.
- Fresh plantation of horticultural crops (mango, sapota, lemon, pomegranate, ber, guava).
- Arrangements for water harvesting in the fields.

Saurashtra & Kutch

- Nursery sowing of kharif vegetable crops like tomato, brinjal and chilli in Ahmedabad and Bhavnagar districts of Bhal and Coastal Zone.
- Continuation of gap filling in pre-sown groundnut and cotton; nursery sowing of fennel with irrigation, intercropping of green gram, pigeon pea, guar in pearl millet for getting more income, harvesting of matured fruits of mango, jamun, lemon etc. and budding in aola and ber in Kachchh district of North West Zone.
- Thinning, intercultural operations and hand weeding in already sown irrigated groundnut in Junagadh, Porbandar, Amreli, Jamnagar Surendranagar and Rajkot districts in Saurashtra.
- Continuation of nursery sowing of tomato, chilli, brinjal and early cauliflower, transplanting of brinjal, chilli and early cauliflower where seedlings are ready, sowing of cucurbits (bottle gourd, bitter gourd, ridge gourd and pumpkin), lady's finger, cluster bean, kidney bean, cowpea, tur and amaranthus; removal of excess water from fields; harvesting and storing it in reservoirs in the areas where heavy rain fall occurs in Amreli, Jamnagar and Rajkot districts of North Saurashtra Zone.

Arunachal Pradesh

- Prepare half moon terraces in fruit crops (orange/banana/apple/peach) grown in steep slopes to prevent nutrient loss during heavy downpour.

Assam

- Due to rainy season, there may be water logging in the banana orchards in Hailakandi, Cachar and Karimganj districts of Assam. Hence ensure good drainage system in the garden.

Meghalaya

- Planting of High Yielding Varieties of ginger/turmeric (varieties: turmeric- Lakadong, RCT-1, ginger- Nadia, Poona, Riodegenerio etc.).

Manipur

- Transplanting of papaya, tree bean, mango.

Mizoram

- Transplanting of brinjal and chilli in the main fields.

- Sowing of maize, okra, French bean, cowpea, Colocasia, planting of ginger and turmeric and also new planting of orchard crops like passion fruit, Khasi mandarin and acid lime.
- Sowing of Khasi Mandarin and acid lime in all the districts of Mizoram.
- Transplanting of passion fruit in all the districts of Mizoram.

Tripura

- Planting of banana.

Nagaland

- Avoid water stagnation in the fields of ginger and keep the field weed free.

West Bengal

- In South 24 Parganas and East Midnapore districts in Coastal Saline Zone, undertake pit preparation of fruit plants like guava, mango and coconut.
- Keep turmeric and ginger fields weed free and avoid water stagnation in Kalimpong district.

Andaman & Nicobar

- Raise the seedling of vegetable crops like cucurbit and solanaceous crops in the poly bag or portray to avoid damage due to heavy rain in North & Middle Andaman and South Andaman districts.

Odisha

- In Mayurbhanj and Keonjhar districts, undertake planting of ginger and turmeric.

Bihar

- In Begusarai, Darbhanga, East Champaran, Gopalganj, Samastipur, West Champaran of North West Alluvial Plain Zone, continue nursery sowing of kharif onion and continue sowing of ginger, turmeric, kharif maize and vegetables.

Jharkhand

- Undertake sowing of groundnut in East Singhbhum district.
- Continue sowing of Marua seed in nursery bed to raise the seedlings in Ranchi district.

Madhya Pradesh:

East MP

- Undertake sowing of kharif onion in Chhatrapur and Tikamgarh districts. Continue planting of ginger. Undertake sowing of rainy vegetables like- ladyfinger, bottle guard, cucurbits, sponge guard, bitter guard and beans.

West MP

- Continue nursery sowing of onion and chilli in Khargwan, Khandwa and Barwani districts utilising the realised and expected rainfall.
- Undertake sowing of kharif onion in Datia districts. Continue planting of ginger. Undertake sowing of rainy vegetables like- ladyfinger, bottle guard, cucurbits, sponge guard, bitter guard and beans.
- Complete planting of turmeric and ginger in Jhabua, Alirajpur and Dhar districts. Continue nursery preparation for kharif vegetables, onion and cauliflower. Prepare field for transplanting of vegetables.

Chhattisgarh

- Continue land preparation for sowing/transplanting of kharif vegetables in North Chhattisgarh.
- Prepare nursery for papaya and custard apple in South Chhattisgarh

Jammu & Kashmir

- Provide staking with plastic string in tomato, bottle gourd, bitter gourd, sponge gourd and cucumber to prevent the fruit from rotting in Rajouri, Ramban Poonch and Udhampur districts of in Intermediate Zone.

- Continue the transplanting of rainy seasonal annuals (gaillardia, balsam, cosmos, portulaca, kochia, sunflower, morning glory, gomphrena, celosia etc) in Jammu, Kathua and Reasi districts of Sub tropical Zone.

Uttarakhand

- Continue nursery sowing of short duration varieties of cabbage, cauliflower, Knol-Khol and broccoli. Complete sowing of rajma and horse gram in Nainital district of Bhabar and Tarai Zone. Undertake sowing of radish, rai, coriander, carrot, spinach (Pusa Harit) and Frasebean.
- Sowing of rainy season okra and prepare the nursery for rainy season crop of chilli In Udham Singh Nagar district of Bhabar and Tarai Zone.

Himachal Pradesh

- Continue sowing of bhindi and French bean in Una, Hamirpur, Kangra and Chamba districts of Sub-Montane and Low Hills Sub-Tropical Zone and in In Bilaspur, Simla, Sirmaur and Solan districts of Mid Hills Sub Humid Zone. Continue planting of ginger and turmeric in Low hills.
- Continue direct sowing & transplanting of tomato, brinjal, chilli and capsicum.

Haryana & Delhi

Haryana

- Undertake field preparation for sowing of pearl millet (bajra) in Western Zone.
- Undertake planting of mango, guava, jamun, orange, papaya, pomegranate and ber in Eastern Zone.

Delhi

- Continue nursery sowing of chilli and brinjal in Western Semi Arid Zone.
- Undertake field preparation for sowing of kharif onion, lobiya, spinach, amaranthus and ladyfinger.
- Undertake sowing of bottle gourd, bitter gourd, pumpkin, ridge gourd and cucumber.

Punjab

- Continue nursery sowing of cauliflower, Brinjal and kharif onion and sowing of okra in in Moga, Bhatinda, Mansa, Muktsar, Sangrur and Barnala districts of Western Zone districts.

Uttar Pradesh

- Continuation of nursery sowing of vegetables like cauliflower, cabbage, brinjal, tomato and chilli in Jhansi, Jalaun, Lalitpur, Mahoba and Hamirpur district of Bundelkhand Zone.

Rajasthan

- Digging of pits for new plantation of ber, aonla and for pomegranate in Bharatpur, Alwar, Karauli districts of Flood Prone Eastern Plain Zone.
- Planting of papaya in Bilwara, Chittorgarh, Udaipur districts of Sub Humid Southern Plain and Aravali Hill Zone.

❖ National AAS Bulletin based on ERFS is also available at <http://www.imdagrimet.gov.in/erfsview15>

Annexure –I

State-wise Varieties of different crops for *Kharif* Season

State	Subdivision	Crop	Varieties
Kerala		Rice	low land: Intan, Abhilash and Hemavati Upland: Amrut or Prasanna.

		Ladies finger	Arka anamika, Susthira, Arka abhaya
Karnataka	Coastal Karnataka	Rice	for low land Intan, Abhilash and Hemavati, for upland Amrut or Prasanna
	South Interior Karnataka	Red gram	TTB-7, BRG-1, 2, 4, 5, Hyd-3c.
		Groundnut	TMV-2, JL-24, KCG-6
		Ragi	Indaf -9, ML-365
		Sesame	Navile-1, T-7
		Green gram	PS-16, PDM-84,178
		Black gram	Karagao-3, T-9, Rashmi
		Cowpea	TVX-944, KBC-1
		Castor	DCS-9 (Jyothi), DCH-177 & 32
	North Interior Karnataka	Rice	Jaya, Rasi, BPT-5204
		Soybean	JS-335, DSB-21
		Green gram	BGS-9, Sel-4, S-4, Chainamung & Pusa baisaki, DGGV-2
		Black gram	DU-1, TAU-1, TU-1, DBGV-5.
		Sorghum	DSV-2,CSV-15, DSV-3, DSV-62, Hybrids – CSH-14, CSH-16, CSH-18, CSH-30, SSV- 74.
		Pigeon pea	BSMR 736, TS-3R
		Soybean	JS-335, DSB-1, DSB-21, JS 93-05.
		Maize	Hybrids –DMH-2, Arjun and Private hybrids, GH-0727, Renuka (G-25).
		Cotton	DHH-11, NCH-145, NHH-44, DHB-105 and Sahana,
		Groundnut	Bunch type varieties GPBD-4, JL-24 and TMV-2, spreading type varieties: DSG-1 and JSP-39, Bunch type of varieties –GPBD-5 and G-2-52, R-2001-3 (Ajay), Spreading type of varieties – DSG-1 and JSP-39. cotton: DHB-915.
Andhra Pradesh	Coastal Andhra Pradesh	Rice	BPT-5204, vijetha, IR-64 and Bavapuri sannaalu, MTU 1010, MTU 1075, NLR 34449.

		Maize	DCH-111, DCH-113, DCH-115, Maandhuri & Priya (sweet varieties), DHM 111, DHM 117, DHM-119, KH 510, Bio 9637, KH 9541, MCH 2, Kohinoor, Prabhal and Bisco 855.
		Red gram	LRG- 38, LRG- 41, laksmi, Abhaya, Asha, Maruthi and PRG-158, LRG 52.
		Black gram	LBG-752, LBG-20, T-9, LBG-623, PU-31, LB-402, LBG-709 and LBG-787 , TBG 1,GBG 104.
		Green gram	LGG-407, LGG-460, LGG-450, LGG-410, TM-96- 2.
		Cotton	Cotton Dorasannaalu
		Ragi	Bharati, Srichaitanya, Vaula.
		Groundnut	Kadiri-7 Bold, Kadiri-8, Bold, kadiri-6 Kadiri-9, Kadiri Harithandra, Kadiri Anantha.
		Sesame	Hima and Sarada (YLM 66)
	Rayalaseema	Rice	MTU 1010, Nellore Masuri in Nellore district.
		Groundnut	Narayani, Abhaya, Dharani, Grishma, TPT-4, Kadiri-6, Kadiri-9 and dharani.
		Redgram	L.R.G-30, L.R.G-41, T.R.G-22,LRG-41, PRG-158, PRG-176, Lakshmi, and Asha.
		Bajra	P.H.B-3, I.C.M.H-356, Dhanashakthi.
		Korra	Prasad,SIA-3085, Krishnadevaraya,Surya nandi, Narasimharaya, Srilakshmi and SIA 3156.
		Castor	PCH-111, PCH-222, Haritha, Kiran.
	Telangana	Rice	RNR15048, kuruvai, ADT 36, ADT 43, ADT 45 and ADT 47.
		Jowar	CSH 6,9,10,11,CSV -15, PNV-1.
		Maize	DHM-101, 103,107 and other private hybrids
		Greengram	ML-267, LGG 407,410,450,460.
		Blackgram	T-9, LGG-20, 623, PBG-1.
		Red gram	LRG 30, ICPL 8863, 332,87119, 85063.
		Soybean	JS 335, MACS-13, 58.
Maharashtra	Konkan	Groundnut	Konkan Gaurav and Trombay Konkan (Tapora), high yielding varieties: TG-26, TAG-24 and TPG-41.
	Madhya Maharashtra	Soybean	Phule Kalyani, Phule Agrani (KDS 344), JS 335, MACS 11188, JS 335, Phule Kalyani (DS-228).

		Sorghum	Hybrid varieties: CSH 5, CSH 9, CSH 13, CSH 14, CSH 16, CSH 21, CSH 25. Improved varieties: SPV 462, CSV 13, CSV 15, CSV 17 and CSV 23.
		Sweet sorghum	SSV 84, CSV 24 SS, CSV 19 SS.
		Groundnut	Phule Morana, Phule Pragati, Phule Vyas, Phule Unnati, Phule RHRG 6021, SB11, TPG41, TG26.
		Rice	Halava: Karjat 184, Ratnagiri 1, Karjat 4, Ratnagiri 711, Phule Radha; Nimgarva: Jaya, Phule Maval, Phule samruddhi, Phule R G –N-6; Garva: Ratnagiri 2, Karjat 2, Daranna, Suvarna; Scented rice: Basmati370, Indrayani, Prabhavati, Sughandha; Hybrid: Sahyadri 1, Sahyadri 2, Sahyadri 3, Sahyadri 4, Sahyadri 5, K R H 2.
		Pearl Millet	Shraddha, Saburi, Phule Shanti or ICTP 8203, ICMV 155.
		Pigeon pea	ICPL 87, Vipula, BSMR-853, BSMR-736.
		Sunflower	EC 68414, SS 56, Bhanu.
	Marathwada	Pigeon pea	rainfed: BDN-2, BDN-708 (Amol), BDN-711 , BDN-716; irrigated: BSMR-853, BSMR-736)
		Green gram	BM-4, Kopargaon, BPMR-145, BM-2002- 01, BM-2003- 2.
		Black gram	BDU-1, TU-1
		Groundnut	JL-24, LGN-2 (Manjra), TLG-45, LGN-1, LGN-123
		Maize	early varieties: Paras, Arun, Kiran, Surya; mid late varieties: Navjot, Manjra, DMH-107, KH-9451, MHH, late varieties: Prabhat, Deccan-103, K-2492, Bio-9381, Maharaja Fodder crops: African Tall, Ganga-5, Vijay and Manjari.
	Vidarbha	Red gram	ICPL- 87119 (Asha), C-11
		Black gram	PKV-15, TAU-1, TAU-2 and TPU-4.
		Green gram	PKV- green gold, PKV mug -8802, TARM-18
		Sorghum	early duration- CSH-14 and CSH-17, medium duration- CSH-9 SPH-388 and improved- SPV-669.
		Cotton	desi cotton: AKA-5, 7, 8, American improved varieties: AKH – 081, PKV-Rajat, AKH-8828,

			hybrid varieties: PKV-DH- 1
Gujarat	Gujarat Region	Rice	(NAUR-1, GNR-2 (Costal area), GNR-3 (N/V), GNR-4 (long duration), Jaya, Ghujari, GR-5, 7, 8, 9, IR-28 and GAR-13).
		Groundnut	semi-spread GG.20 or erect GG.2, GG.5, GG.7 and TG-26.
	Saurashtra & Kutch	Groundnut	GG-20 & 22, GUG-10, GG-2,11,13, TAG- 24 & 37, TPG-41, TLG-45.
		Cotton	early: Bg-II GCH-8, Agritop-333, 777, 444, Jay, Beejdhan-2, Sarju, Atom, Bhakti, Medium Late: Bg-II GCH-6, Agritop-444, Solar-76, Swapna, Mallika.
		Cow pea	Gujarat Cowpea-1,2,4, Pusa Falguni.
		Black gram	T-9, GU-1.
		Green gram	GM-4, K-85.
		Pearl millet	GHB-558, 77, 538, 719, 732,744.
		Castor	GAUCH-1, GCH-4,5,6,7, GC-2, 3.
		Soybean	Guj. Soya. 1, 2, 3.
		Pigeonpea	BDN-2, Vaishali, GTH-1, GT-100.
		Sesame	Guj.Til-1,2,3,10, GT-2 or GT-3.
Assam		Bao rice	Maguri, Kekua Bao, Negheri Bao, Tara Bao
		Sali Rice	Ranjit, Bahadur, Peoli, Moniram, Pankaj, Kushal, for typical lowland rice area, medium duration varieties: Satya and Basundhara T.T.B.-404, Mulagabharu, Kanaklata, Joymoti, IR-36, IR-64. for flood prone area: Luit, Jalashree, Plaban.
		Groundnut	TG-1A, JL-24
		Pigeon pea	T-21
		Black pepper	Panniyur-1, and 2, Kalluvali, Karimunda, kottandam, Balankotta
Meghalaya		Sali rice	Shahsarang -1, Lampnah, IR 64, Ranjit, RCPL 1-412, RCPL 1-410, RCPL 1- 411 & local varieties like Mendri, Manipuri

		Groundnut	ICGS76 and JL 24
		Soybean	JS 335, Bragg, Ankur, Pusa Soybean-1 and Local JS 2
Tripura		Aman rice	Gomati, Ranjeet, Swarna, Naveen
		Maize	DMH- 849, 117, HQPM 1, BQPM 9
		Groundnut	TAG 24, TG 37A, ICGS 76
Nagaland		Rice	CAU R1, CAU R3, RCM-9 and RCM-1.
West Bengal		Aman rice	medium duration MTU-7029, MTU1001, Pratiksha and for long duration CR1017, CR1018,
		Guava	Himsagar, Mallicka, Langra for Mango; Safeda, L-49
		Coconut	Eastcoastal, Hazari., Cr1019, Sabita.
		dry seeded long duration rice	Sabita Foundation, Swarna sub-1 certified, IR-64, Hira T.L.
Odisha		Rice	Early varieties: Jogesh, Siddant, Hazaridhan, Mandakini, Jyotirmayee, Virendra, Sahabhagi, Medium varieties: Pratikshya, Manaswini, Tapaswini MAS, Konark, Surendra, Kharavela, Naveen, Abhisek, Late varieties: Varshadhan, Ranidhan, Pooja, Mrinalini, RGL-2837, Moti, Ketakijoha, Padmini, Kanchana, Mahanadi, Jagabandhu. Hybrid varieties: CR Dhan 701, NK 5251, JKRH 401, Ajay, Rajalaxmi, Arize 6444G. short duration varieties: Sahabhagi, Khandagiri, Udaigiri, Kalinga-3, Jyotirmayee, Mandakini etc.
		Cotton	HYV cotton: Suraj, Supriya, B.S.-30, B.S.-279, Surabhi, Hybrids varieties: Bunny, Diana, Bhaskra, Namaskara, Tulasi, Sigma, Chiruta, Takat etc)
		Arhar	Asha, Laxmi, UPAS-120, ICPL-88039
		Maize	Shakti-1, Navjot, Decan-107, Decan-109 etc. and hybrids varieties: Megan-G, Megan, MM- 1107, Highshell, Prabal, Proagro 4643, Bio9681, Pinnacle, DMH-7705
Bihar		Rice	Long duration rice- Rajshree, Rajendra sweta, Rajendra Mansuri, BPT-5204, Swarna, Satyam and Kishori), medium duration rice- Seeta, Santosh, Saroj, Rajshri, Prabhat, Rajendra suvasni, Rajendra kasturi.
		Maize	Devki, Suwan, Shaktimaan-1, Shaktimaan-2, Rajendra Shanker Makka-3 and Ganga 11

		Onion	<i>Agrifound Dark Red (ADR), N-53, Bhima Super, Arka Kalyan),</i>
		Turmeric	Rajendra Sonia and Rajendra Sonali
		Ginger	Maran and Nadia.
Jharkhand		Rice	Direct seeded upland rice; improved varieties: Vandana, Birsa Vikas Dhan -109 & Birsa Vikas Dhan -110, medium land rice improved varieties: Anjali, Sahbhagi, Naveen, Lalat, Birsamati, Sugandha, BR-10, Pro-Agro 6444, IR-36, IR-64, low land rice improved varieties Swarna (MTU-7029), Rajshree, Sambha Mahsuri (BPT-5204), Birsa Dhan- 202, Birsamati, Pro-Agro 6444.
		Maize	Birsa Makka-1, Birsa Makka-2, Suwan-1(Hybrid), HQPM (Hybrid)
		Pigeon pea	Birsa Arhar (210 days), Bahar (240 Days) and ICPH 2671 (210 days).
		Ginger	Vardhaman or Nadia
		Turmeric	Rajendera Sonia.
Madhya Pradesh		Rice	Very early maturing: Jawahar Dhan (JD) 75, Vandana. Early maturing: JD 201, JRH-5, JRH-8, Danteshwari, Sahbhagi. Medium duration: MR-219, WGL 32100, IR 36, IR 64, Kranti, Mahamaya, Pusa Sugandha-3, Pusa Sugandha-5, Pusa basmati-1, MTU 1010. Long duration: Mahsuri, Swarna
		Soybean	Short-duration: JS 93-05, JS 95-60, JS 335, JS 90-4. Medium duration: JS 97-52, JS 20-29, NRC-37, NRC-7, NRC-12.
Chhattisgarh		Rice	Upland: CR-40, Purnima, Danteswari, Shabagi, Midland: MTU1010, Samleswari, Rajeswari, Low land : MTU 1001, Suwarna ,Mahamaya, Jal Dube ,Hybrid : Arice 6444, US 312.
		Soybean	J.S. 335, Indira soya-9, J.S. 80-21, J.S. 93-05.
		Groundnut	SB -11 (J 11), ICGS-37, ICGS-44, T.A.G.-24, T.A.G.-28.
		Til	T.K.G. -21, T.K.G-22, T.K.G-55, and T.K.G - 8.
		Tomato	Pusa early dwarf, Sweet 72, Pusa rubi, Pusa Gurab, Mangala, Naveen, Laxmi 5005 & NS 815.
		Brinjal	Punjab Shadabahr, K S 331, P H 5, P H 6 ,KS 224 ,A R B H -543.
Jammu & Kashmir		Rice	Basmati 370 and Ranbir Basmati
Uttarakhand		Rice	Sharbati, Pusa1121, Pusa1, Pusa44, NDR359 etc.

		Pigeon pea	Pant Arhar-3, Pant Arhar-291, UPAS-120, Pusa-992
		Maize	Tarun, Navin, Kiran, Navjot, Pratap maize-1, Pusa sankul-3& 4.
Uttar Pradesh		Arhar	Prabhat and UPAS-120 fast-ripening and late-ripening varieties- Narendra Tur- 1 and Malviya -15
Punjab		Rice	Basmati 370 and Basmati 386; direct sowing: basmati variety Pusa Basmati 1121.
		Maize	PMH 1, PMH 2 and Parbhat.
		Brinjal	BH-2, PBH-3, Punjab Barsati, Punjab Sada Bahar, Punjab Nagina and Punjab Neelam
		Okra	Punjab-8 and Punjab-7
		Kharif onion	Agrifound Dark Red
Delhi		Rice	Hybrid varieties: - K. R. H 2, PHB 71, Pant hybrid Dhan1, Narendra hybrid dhan 1, P R H 10, High yielding varieties- Pusa 44, Pant Dhan-4, Pant Dhan-10, Pusa-834, Pusa basmati-1, Pusa basmati-1509, Pusa, Improved basmati, Pusa sugandha-5, Pusa sugandha-4 (Pusa 1121), Ranvir basmati and Taravadi basmati
Rajasthan		Pearl millet	RHB-121, HHB-67, HHB-60, Raj-171, GHB-538, Pusa-605, RHB-177.
		Maize	HQPM-1, HQPM-5, PEHM-1, PEHM-2, Pratap Hybrid-1, Bio-9681, Bio-9637, Navjot, Mahi Kanchan, Pratap Makka-5.